

Product Sheet

H_GLP1R Reporter HEK-293 Cell Line

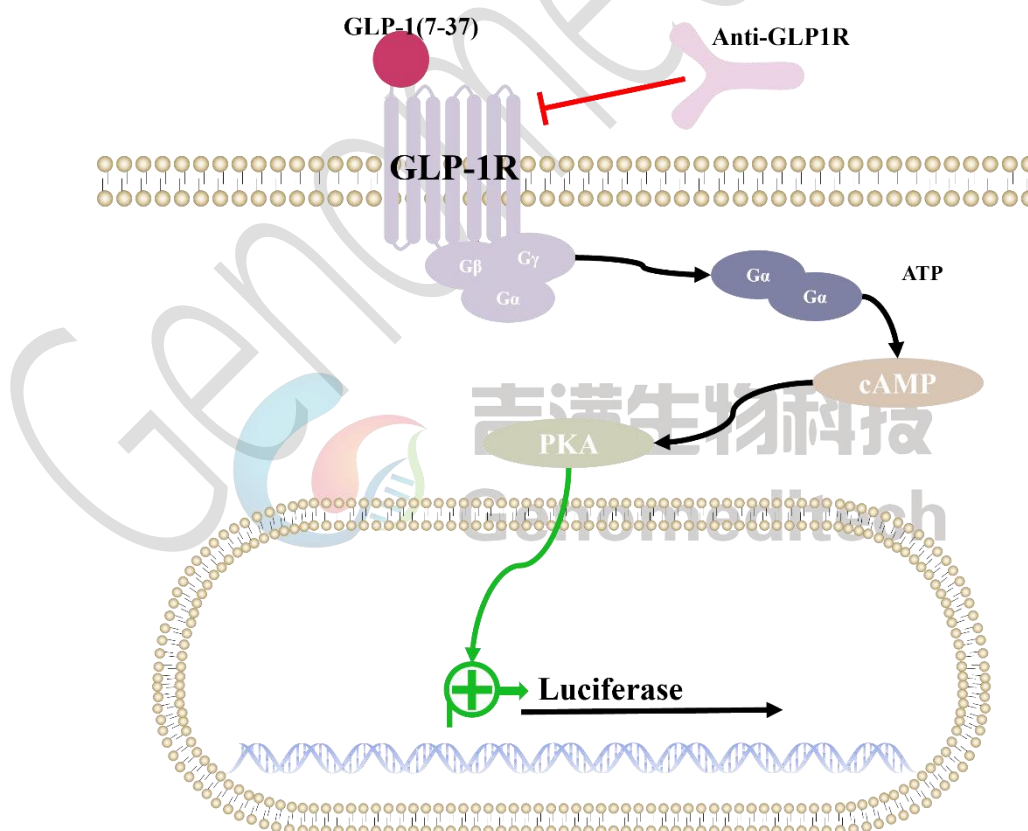
Catalog number: GM-C25537

Version 3.3.1.241030

Glucagon-like peptide-1 receptor (GLP-1R) is a receptor protein found on pancreatic cells and brain neurons, made from the GLP1R gene on chromosome 6. As part of the glucagon receptor family of G protein-coupled receptors, GLP-1R, when activated, stimulates the adenylate cyclase pathway, boosting insulin synthesis and release. This makes it a target for diabetes medications called GLP-1R agonists, and it also helps regulate appetite in the brain.

GLP-1R recognizes specific ligands at its N-terminal and couples with various G proteins ($G_{\alpha s}$, $G_{\alpha i}$, $G_{\alpha o}$, and $G_{\alpha q/11}$) to influence cell pathways. Binding to GLP-1 (7-37) activates $G_{\alpha s}$ by dissociating its alpha subunit, which activates adenylate cyclase (cAMP). This increases intracellular cAMP and protein kinase A (PKA) activity, enhancing insulin gene transcription through signaling pathways.

H_GLP1R Reporter HEK-293 Cell Line is a clonal stable HEK-293 cell line constitutively expressing human GLP1R, along with signal-dependent expression of a luciferase reporter gene. The binding of the agonistic GLP-1 protein to GLP1R activates downstream reporter genes, leading to luciferase expression. Blockade antibodies of GLP1R can inhibit GLP1-GLP1R signal transmission. The luciferase readout represents the activation level of the signaling pathway and can thus be used for evaluating the in vitro effects of related drugs of GLP1R.



Specifications

Quantity	5E6 Cells per vial, 1 mL
Product Format	1 vial of frozen cells
Shipping	Shipped on dry ice
Storage Conditions	Liquid nitrogen immediately upon receipt

Recovery Medium	DMEM+10% FBS+1% P.S
Growth medium	DMEM+10% FBS+1% P.S+4 µg/mL Blasticidin+0.75 µg/mL Puromycin
Note	None
Freezing Medium	90% FBS+10% DMSO
Growth properties	Adherent
Growth Conditions	37°C, 5% CO ₂

Mycoplasma Testing	The cell line has been screened to confirm the absence of Mycoplasma species.
Safety considerations	Biosafety Level 2
Note	It is recommended to expand the cell culture and store a minimum of 10 vials at an early passage for potential future use.

Materials

Reagent	Manufacturer/Catalogue No.
DMEM	Gibco/C11995500BT
Fetal Bovine Serum	Cegrogen biotech/A0500-3010
Pen/Strep	Thermo/15140-122
Blasticidin	Genomeditech/ GM-040404
Puromycin	Genomeditech/ GM-040401
GLP-1(7-37) acetate	MCE/HY-P0055A
Anti-GLP1R hIgG1 Antibody(mAb-36986)	Genomeditech/ GM-51168AB
ONE-Glo™ Luciferase Assay System	Promega/E6120

Figures

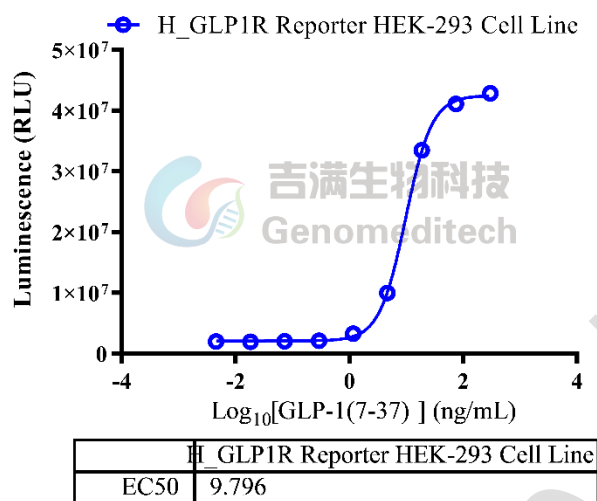


Figure 1 | Response to GLP-1(7-37). The H_GLP1R Reporter HEK-293 Cell Line (Cat. GM-C25537) at a concentration of 1.5E4 cells/well (96-well format) was stimulated with serial dilutions of GLP-1(7-37) (MCE/HY-P0055) in assay buffer (DMEM + 1% FBS + 1% P.S) for 7 hours. The firefly luciferase activity was measured using the ONE-Glo™ Luciferase Assay System (Promega/E6120). The maximum induction fold was approximately [21.1]. Data are shown by drug mass concentration.

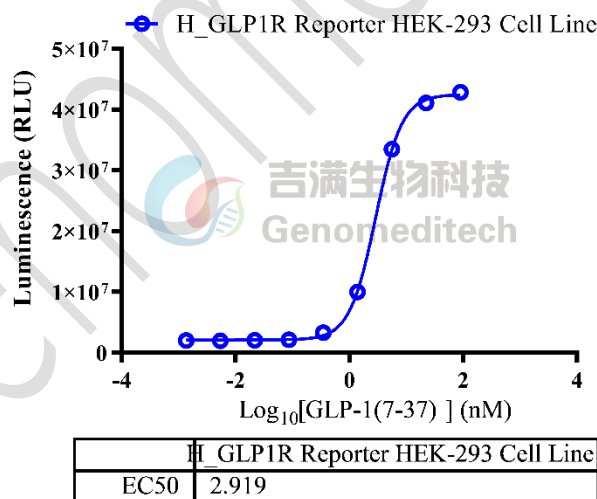


Figure 2 | Response to GLP-1(7-37). The H_GLP1R Reporter HEK-293 Cell Line (Cat. GM-C25537) at a concentration of 1.5E4 cells/well (96-well format) was stimulated with serial dilutions of GLP-1(7-37) (MCE/HY-P0055) in assay buffer (DMEM + 1% FBS + 1% P.S) for 7 hours. The firefly luciferase activity was measured using the ONE-Glo™ Luciferase Assay System (Promega/E6120). The maximum induction fold was approximately [21.1]. Data are shown by drug molar concentration.

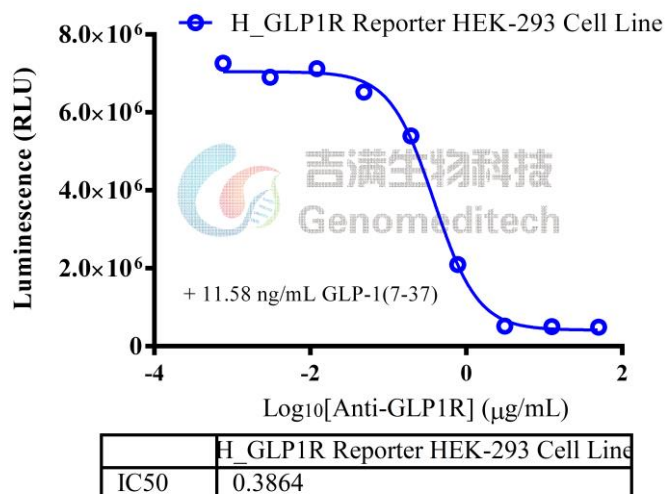


Figure 3 | Response to Anti-GLP1R hIgG1 Antibody(mAb-36986). Begin by preparing the H_GLP1R Reporter HEK-293 Cell Line (Cat. GM-C25537) at a density of 1.5E4 cells/well in a 96-well format. The serial dilutions of Anti-GLP1R hIgG1 Antibody(mAb-36986) (Cat. [GM-51168AB](#)) were incubated with 11.58 ng/mL of GLP-1(7-37) (MCE/HY-P0055) for 1 hour in assay buffer (DMEM + 1% FBS + 1% P.S). After pre-incubation, the mixture was added to the H_GLP1R Reporter HEK-293 Cell Line and incubated for 6 hours. Firefly luciferase activity is then measured using the ONE-Glo™ Luciferase Assay System (Promega/E6120). The results indicated a maximum blocking fold of approximately [15.9]. Data are shown by drug mass concentration.

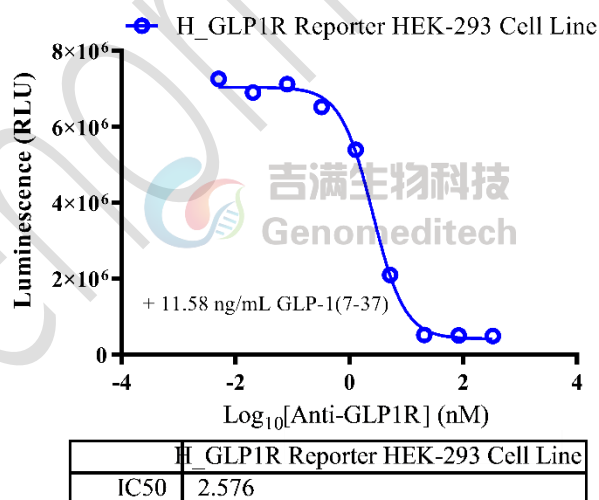


Figure 4 | Response to Anti-GLP1R hIgG1 Antibody(mAb-36986). Begin by preparing the H_GLP1R Reporter HEK-293 Cell Line (Cat. GM-C25537) at a density of 1.5E4 cells/well in a 96-well format. The serial dilutions of Anti-GLP1R hIgG1 Antibody(mAb-36986) (Cat. [GM-51168AB](#)) were incubated with 11.58 ng/mL of GLP-1(7-37) (MCE/HY-P0055) for 1 hour in assay buffer (DMEM + 1% FBS + 1% P.S). After pre-incubation, the mixture was added to the H_GLP1R Reporter HEK-293 Cell Line and incubated for 6 hours. Firefly luciferase activity is then

measured using the ONE-Glo™ Luciferase Assay System (Promega/E6120). The results indicated a maximum blocking fold of approximately [15.9]. Data are shown by drug molar concentration.

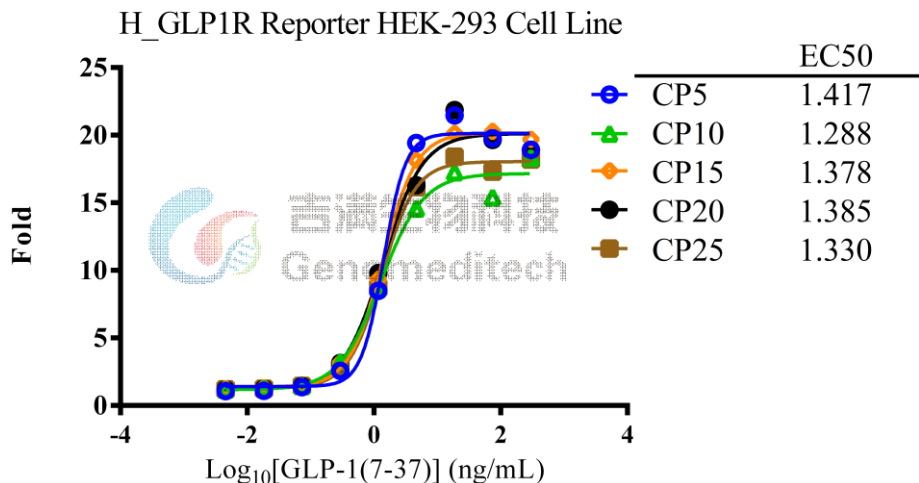


Figure 5 | The passage stability of response to GLP-1(7-37). The passage 5, 10, 15, 20 and 25 of H_GLP1R Reporter HEK-293 Cell Line (Cat. GM-C25537) at a concentration of 1.5E4 cells/well (96-well format) was stimulated with serial dilutions of GLP-1(7-37) (MCE/HY-P0055) in assay buffer (DMEM + 1% FBS + 1% P.S) for 7 hours. The firefly luciferase activity was measured using the ONE-Glo™ Luciferase Assay System (Promega/E6120). Data are shown by drug mass concentration.

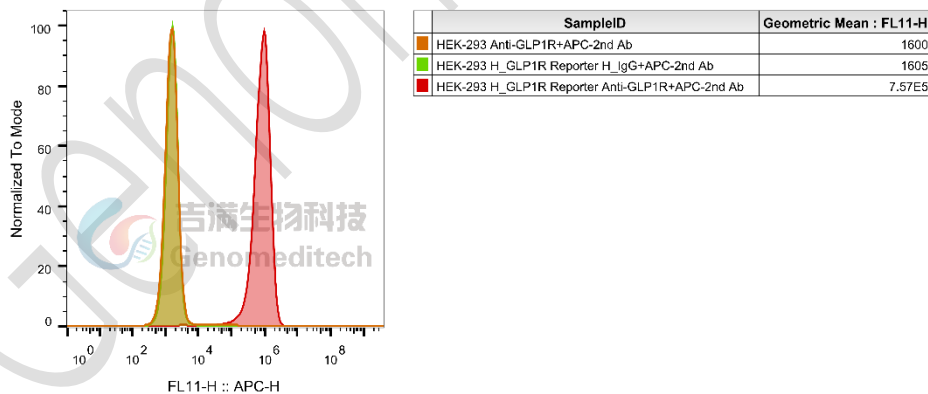


Figure 6 | H_GLP1R Reporter HEK-293 Cell Line (Cat. GM-C25537) was determined by flow cytometry using Anti-GLP1R hIgG1 Antibody(mAb-36986) (Cat. GM-51168AB).

Cell Recovery

Recovery Medium: DMEM+10% FBS+1% P.S

To insure the highest level of viability, thaw the vial and initiate the culture as soon as possible upon receipt. If upon arrival, continued storage of the frozen culture is necessary, it should be stored in liquid nitrogen vapor phase and not at -70°C . Storage at -70°C will result in loss of viability.

- a) Thaw the vial by gentle agitation in a 37°C water bath. To reduce the possibility of contamination, keep the O-ring and cap out of the water. Thawing should be rapid (approximately 2 - 3 minutes).
- b) Remove the vial from the water bath as soon as the contents are thawed, and decontaminate by dipping in or spraying with 70% ethanol. All of the operations from this point on should be carried out under strict aseptic conditions.
- c) Transfer the vial contents to a centrifuge tube containing 5.0 mL complete culture medium and spin at approximately $176 \times g$ for 5 minutes. Discard supernatant.
- d) Resuspend cell pellet with the recommended recovery medium. And dispense into appropriate culture dishes.
- e) Incubate the culture at 37°C in a suitable incubator. A 5% CO_2 in air atmosphere is recommended if using the medium described on this product sheet.

Cell Freezing

Freezing Medium: 90% FBS+10% DMSO

- a) Centrifuge at $176 \times g$ for 3 minutes to collect cells.
- b) Resuspend the cells in pre-cooled freezing medium and adjust the cell density to 5×10^6 cells/mL.
- c) Aliquot 1 mL into each vial.
- d) Place the vial in a controlled-rate freezing container and store at -80°C for at least 1 day, then transfer to liquid nitrogen as soon as possible.

Cell passage

Growth medium: DMEM+10% FBS+1% P.S+4 $\mu\text{g/mL}$ Blasticidin+0.75 $\mu\text{g/mL}$ Puromycin

For the first 1 to 2 passages post-resuscitation, use the recovery medium. Once the cells have stabilized, switch to a growth medium.

- a) Remove and discard culture medium.
- b) Briefly rinse the cell layer with PBS to remove all traces of serum that contains trypsin inhibitor.
- c) Add 1.0 mL of 0.25% (w/v) Trypsin-EDTA solution to dish and observe cells under an inverted microscope until cell layer is dispersed (usually within 30 to 60 seconds at 37°C).
- d) Note: To avoid clumping do not agitate the cells by hitting or shaking the flask while waiting for the cells to detach. Cells that are difficult to detach may be placed at 37°C to facilitate dispersal.
- e) Add 2.0 mL of growth medium to mix well and aspirate cells by gently pipetting.
- f) After centrifugation, resuspend the pellet and add appropriate aliquots of the cell suspension to new culture vessels.
- g) Incubate cultures at 37°C .

Subcultivation Ratio: A subcultivation ratio of 1:3 - 1:4 is recommended

Medium Renewal: Every 2 to 3 days

Notes

- a) Upon initial thawing, a higher number of dead cells is observed, which is a normal phenomenon. Significant improvement is seen after adaptation. Once the cells reach a stable state, the number of dead cells decreases after subculturing and the cell growth rate becomes stable.

Related Products

GCGR	
H_GCGR Reporter CHO-K1 Cell Line	H_GCGR Reporter HEK-293 Cell Line
H_GCGR CHO-K1 Cell Line	H_GCGR HEK-293 Cell Line
Mouse_GCGR HEK-293 Cell Line	
Anti-H_GCGR hIgG2 Antibody(volagidemab)	
GLP1R	
H_GLP1R Reporter CHO-K1 Cell Line	Cynomolgus_GLP1R HEK-293 Cell Line
H_GLP1R CHO-K1 Cell Line	H_GLP1R HEK-293 Cell Line
Mouse_GLP1R HEK-293 Cell Line	
Anti-GLP1R hIgG1 Antibody(mAb-36986)	Anti-H_GLP1R hIgG1 Antibody(glutazumab)
FGF21:FGFR	
H_FGF21 Reporter HEK-293 Cell Line	
CALCA(CGRP): CALCRL RAMP	
H_CALCRL RAMP1 Reporter HEK-293 Cell Line	Cynomolgus_CALCRL RAMP1 HEK-293 Cell Line
H_CALCRL RAMP1 CHO-K1 Cell Line	H_CALCRL RAMP1 HEK-293 Cell Line
H_CALCRL RAMP2(AM1) CHO-K1 Cell Line	H_CALCRL RAMP3(AM2) CHO-K1 Cell Line
Anti-CALCRL RAMP1 hIgG2 Antibody(Erenumab)	
GIP:GIPR	
H_GIPR Reporter CHO-K1 Cell Line	H_GIPR Reporter HEK-293 Cell Line
H_GIPR Reporter HEK-293 DDX35TM Cell Line	Cynomolgus_GIPR HEK-293 Cell Line
H_GIPR CHO-K1 Cell Line	H_GIPR HEK-293 Cell Line
Mouse_GIPR HEK-293 Cell Line	
Anti-H_GIPR hIgG1 Antibody(AMG-133)	
ACVR2A: ACTRIIB: Active A	
ACVR2A KO HEK-293 Cell Line	Activin A Reporter Cell Line
H_ACVR2A Reporter Cell Line	H_ACVR2B Reporter Cell Line
ACVR2B KO HEK-293 Cell Line	H_ACVR2A HEK-293(ACVR2B KO) Cell Line
H_ACVR2B HEK-293(ACVR2A KO) Cell Line	
Anti-ACVR2B hIgG1 Antibody(Bimagrumab)	Anti-ACVR2B hIgG1 Antibody(Fab-17G05)
Anti-ACVR2B mIgG2a Antibody(Bimagrumab)	Anti-H_ACVR2B hIgG1 Reference Antibody(Bimbio)
Biotinylated Human ACVR2B Protein; His-Avi Tag	Biotinylated Mouse ACVR2A Protein; His-Avi Tag
Biotinylated Mouse ACVR2B Protein; His-Avi Tag	Human Activin A Protein; His Tag

Human Activin B Protein; His Tag	Human ACVR2A Protein; hFc Tag
Human ACVR2A Protein; His Tag	Human ACVR2B Protein; hFc Tag
Human ACVR2B Protein; His Tag	Mouse ACVR2B Protein; His Tag
AMY: CALCR RAMP	
H_CALCR RAMP3(AMY3) Reporter CHO-K1 Cell Line	H_CALCR Reporter CHO-K1 Cell Line

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